

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please amend the title at page 36, line 1, as follows:

CLAIMS

WHAT IS CLAIMED IS:

1. (Currently Amended) A method of controlling routing of packets in a packet switching network including an infrastructure of packet switching nodes interconnected by packet transport links, and a plurality of access nodes to which a routing path, defined by data held in packet switching nodes located along said routing path, may be directed in said infrastructure for a given network address, said method comprising:

assigning one or more network addresses to a first access node as one or more home addresses of said first access node;

dynamically allocating a first said home address to a first mobile node being served via a communications link by said first access node, at least one routing path in said infrastructure being directed to said first access node for said first home address;

altering routing in said infrastructure when said first mobile node receives service from a second access node by transmitting routing update messages to a limited subset of said packet switching nodes, said subset being localized ~~localized~~ in the area of a connecting path between said first and second access nodes, such that at least one routing path in said infrastructure is directed to said second access node for said first home address; and

subsequently altering routing in said infrastructure such that at least one routing path in said infrastructure is directed to said first access node for said first home address, and allocating said first home address to a second mobile node being served by said first access node;

wherein a plurality of said home addresses have an aggregated entry in routing data held in a first packet switching node in said infrastructure when said plurality of home addresses have at least one routing path directed to said first access node.

2. (Original) A method according to claim 1, wherein said routing update messages are originated at said second access node.

3. (Previously Presented) A method according to claim 1, wherein said routing update messages are transmitted to packet switching nodes adjacent to said connecting path whilst propagation of said messages away from said connecting path is limited.

4. (Currently Amended) A method as in claim 1 ~~of controlling routing of packets in a packet switching network including an infrastructure of packet switching nodes interconnected by packet transport links, and a plurality of access nodes to which a routing path, defined by data held in packet switching nodes located along said routing path, may be directed in said infrastructure for a given network address, said method further~~ comprising:

~~assigning one or more network addresses to a first access node as one or more home addresses of said first access node;~~

~~dynamically allocating a first said home address to a first mobile node being served via a communications link by said first access node, at least one routing path in said infrastructure being directed to said first access node for said first home address;~~

~~altering routing in said infrastructure when said first mobile node receives service from a second access node such that at least one routing path in said infrastructure is directed to said second access node for said first home address; and~~

when said home address becomes available for re-allocation, altering routing in said infrastructure such that at least one routing path in said infrastructure is directed to said first access node for said first home address, and transmitting a routing message to said first access node indicating that said first home address may be allocated to a second mobile node being served by said first access node.

5. (Canceled)

6. (Currently Amended) A method according to claim ~~5~~, 1 wherein when one of said plurality of home addresses has a routing path directed to a second access node, said aggregated entry in said first packet switching node is not used for routing packets to said first home address.

7. (Original) A method according to claim 6 wherein said plurality of home addresses have an aggregated entry in routing data held in a second packet switching node in said infrastructure when said plurality of home addresses have at least one routing path directed at said first access node, and said aggregated entry in routing data held in said second packet switching node is used for routing packets to said one home address when said one home address has a routing path directed to said second access node.

8. (Previously Presented) A method according to claim 1 wherein said first and second access nodes are separately located, and a change of service between said first and second access nodes occurs due to mobility of said mobile node and involves handover of the communications link of said mobile node.

9. (Previously Presented) A method according to claim 1 wherein said first home address is allocated to said first mobile station during an access session, and said subsequent altering step occurs after the access session ends.

10. (Previously Presented) A method according to claim 1, wherein said network forms an autonomous system (AS) in an internetwork, said network connectionless routing protocol being an interior gateway protocol (IGP).

11. (Previously Presented) A method according to claim 1, wherein said access nodes comprise base stations of a cellular radio communications system.

12. (Previously Presented) A method according to claim 1, wherein said access nodes comprise a network access server of a fixed-line internet access provider.

13. (Previously Presented) A method according to claim 1, wherein packets are transmitted along a said routing path by hop-by-hop routing, a routing decision being made at each packet switching node along said routing path.

14. (Previously Presented) A method according to claim 1, wherein said mobile node is a mobile router serving a mobile host using said first home address for communications with one or more other hosts via said network.

15. (Currently Amended) A method of controlling routing of packets in a packet switching network including an infrastructure of packet switching nodes interconnected by packet transport links, and a plurality of access nodes to which a routing path, defined by data held in packet switching nodes located along said routing path, may be directed in said infrastructure for a given network address, said method comprising:

routing packets along a first routing path for a first network address, which routing path is one of a first plurality of routing paths directed to a first access node in said infrastructure for said first network address, said first access node serving a mobile node using said first network address via a communications link;

transmitting a directed routing update message to said first access node from a second access node, to create a second routing path for said first network address, said second routing path being directed to said second access node;

handing over the communications link of the mobile node, such that the second access node serves said mobile node; and

routing packets to said second access node via said second routing path;

wherein said second routing path is one of a second plurality of routing paths directed to said second access node in said infrastructure for said first network address and said method comprises:

transmitting a further directed routing update message to said second access node from said first access node, to create a third routing path for said first network address, said third routing path being directed to said first access node.

16. (Original) A method according to claim 15, wherein said directed update message is a unicast update message.

17-18. (Cancelled)

19. (Currently Amended) A method according to claim ~~18~~,15 wherein said third routing path is one of said first plurality of routing paths.

20. (Currently Amended) A method according to claim ~~18~~,15 wherein said further directed routing update message is transmitted in response to the ending of an access session for said mobile node.

21. (Previously Presented) A method according to claim 15, wherein said first plurality of routing paths are precomputed in said network, and said second routing path is created in response to mobility of said mobile node between said first and second access nodes.

22. (Currently Amended) A method ~~according to claim 15, of controlling routing of~~ packets in a packet switching network including an infrastructure of packet switching nodes interconnected by packet transport links, and a plurality of access nodes to which a routing path, defined by data held in packet switching nodes located along said routing path, may be directed in said infrastructure for a given network address, said method comprising:

routing packets along a first routing path for a first network address, which routing path is one of a first plurality of routing paths directed to a first access node in said infrastructure for said first network address, said first access node serving a mobile node using said first network address via a communications link;

transmitting a directed routing update message to said first access node from a second access node, to create a second routing path for said first network address, said second routing path being directed to said second access node;

wherein said directed routing update message is transmitted when an access session for said mobile node ends.

23. (Amended) A method ~~according to claim 21, of~~ controlling routing of packets in a packet switching network including an infrastructure of packet switching nodes interconnected by packet transport links, and a plurality of access nodes to which a routing path, defined by data held in packet switching nodes located along said routing path, may be directed in said infrastructure for a given network address, said method comprising:

routing packets along a first routing path for a first network address, which routing path is one of a first plurality of routing paths directed to a first access node in said infrastructure for said first network address, said first access node serving a mobile node using said first network address via a communications link;

transmitting a directed routing update message to said first access node from a second access node, to create a second routing path for said first network address, said second routing path being directed to said second access node;

wherein said first plurality of routing paths are precomputed in said network, and said second routing path is created in response to mobility of said mobile node between said first and second access nodes;

wherein said second routing path corresponds to a routing path precomputed in said infrastructure for said first address prior to the start of said access session.

24. (Previously Presented) A method according to claim 15, wherein said routing protocol is a link reversal routing protocol.

25. (Previously Presented) A method according to claim 1, wherein said network address is an Internet Protocol (IP) address.

26. (Previously Presented) A method according to claim 1, wherein said communications link is a wireless link.

27. (New) A method of controlling routing of packets in a packet switching network including an infrastructure of packet switching nodes interconnected by packet transport links, and a plurality of access nodes to which a routing path, defined by data held in packet switching nodes located along said routing path, may be directed in said infrastructure for a given network address, said method comprising:

assigning one or more network addresses to a first access node as one or more home addresses of said first access node, wherein a plurality of said network addresses have an aggregated entry in routing data held in a first packet switching node in said infrastructure when said plurality of network addresses have at least one routing path directed to a first access node;

routing packets along a first routing path for a first network address, said first routing path being one of one or more routing paths directed to said first access node for said first network address, said first access node serving a mobile node using said first network address via a communications link; and

altering routing in a plurality of nodes in said infrastructure when said first mobile node receives service from a second access node by transmitting directed routing update messages to a limited subset of said packet switching nodes, said subset being localized in the area of a

connecting path between said first and second access nodes, to create a second routing path for said first network address, said second routing path being one of one or more routing paths directed to said second access node for said network address.

28. (New) A method according to claim 27 wherein said routing update messages are originated at said second access node.

29. (New) A method according to claim 27 wherein said routing update messages are transmitted to packet switching nodes adjacent to said connecting path whilst propagation of said messages away from said connecting path is limited.

30. (New) A method according to claim 27 said method comprising the antecedent steps of:

assigning one or more network addresses to said first access node;

dynamically allocating a first said network address to said mobile node said method further comprising:

after said first network address becomes available for re-allocation, altering routing in said infrastructure such that at least one routing path in said infrastructure is directed to said first access node for said first network address, and transmitting a routing message to said first access node indicating that said first network address may be allocated to a second mobile node being served by said first access node.

31. (New) A method according to claim 27 wherein when one of said plurality of network addresses has a routing path directed to a second access node, said aggregated entry in said first packet switching node is not used for routing packets to said first network address.

32. (New) A method according to claim 31 wherein said plurality of network addresses have an aggregated entry in routing data held in a second packet switching node in said

infrastructure when said plurality of network addresses have at least one routing path directed at said first access node, and said aggregated entry in routing data held in said second packet switching node is used for routing packets to said one network address when said one network address has a routing path directed to said second access node.

33. (New) A method according to claim 27 wherein said first and second access nodes are separately located, and a change of service between said first and second access nodes occurs due to mobility of said mobile node and involves handover of the communications link of said mobile node.

34. (New) A method according to claim 27 wherein said first network address is allocated to said first mobile node during an access session, and said subsequent altering step occurs after the access session ends.

35. (New) A method according to claim 27 wherein said network forms an autonomous system (AS) in an internetwork running a network connectionless routing protocol being an interior gateway protocol (IGP).

36. (New) A method according to claim 27 wherein said access nodes comprise base stations of a cellular radio communications system.

37. (New) A method according to claim 27 wherein said access nodes comprise a network access server of a fixed-line internet access provider.

38. (New) A method according to claim 27 wherein packets are transmitted along a said routing path by hop-by-hop routing, a routing decision being made at each packet switching node along said routing path.

39. (New) A method according to claim 27 wherein said mobile node is a mobile router serving a mobile host using said first network address for communications with one or more other hosts via said network.

40. (New) A method according to claim 27 wherein said directed routing update message is a unicast update message.

41. (New) A method according to claim 27 said method comprising handing over the communications link of the mobile node, such that the second access node serves said mobile node, and routing packets to said second access node via said second routing path.

42. (New) A method according to claim 41 said method further comprises:
transmitting further directed routing update messages to a limited subset of said packet switching nodes, said subset being localized in the area of said connecting path, to create a third routing path for said first network address, said third routing path being directed to said first access node.

43. (New) A method according to claim 42 wherein said further directed routing update message is transmitted in response to the ending of an access session for said mobile node.

44. (New) A method according to claim 27 wherein said one or more routing paths directed to said first access node are precomputed in said network, and said second routing path is created in response to mobility of said mobile node between said first and second access nodes.

45. (New) A method according to claim 27, wherein said directed routing update message is transmitted when an access session for said mobile node ends.

46. (New) A method according to claim 44 wherein said second routing path corresponds to a routing path precomputed in said infrastructure for said first network address prior to the start of said access session.

47. (New) A method according to claim 27 wherein said network address is an Internet Protocol (IP) address.

48. (New) A method according to claim 27 wherein said communications link is a wireless link.